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RAO UES - Restructuring

by Sergei Chernyshov

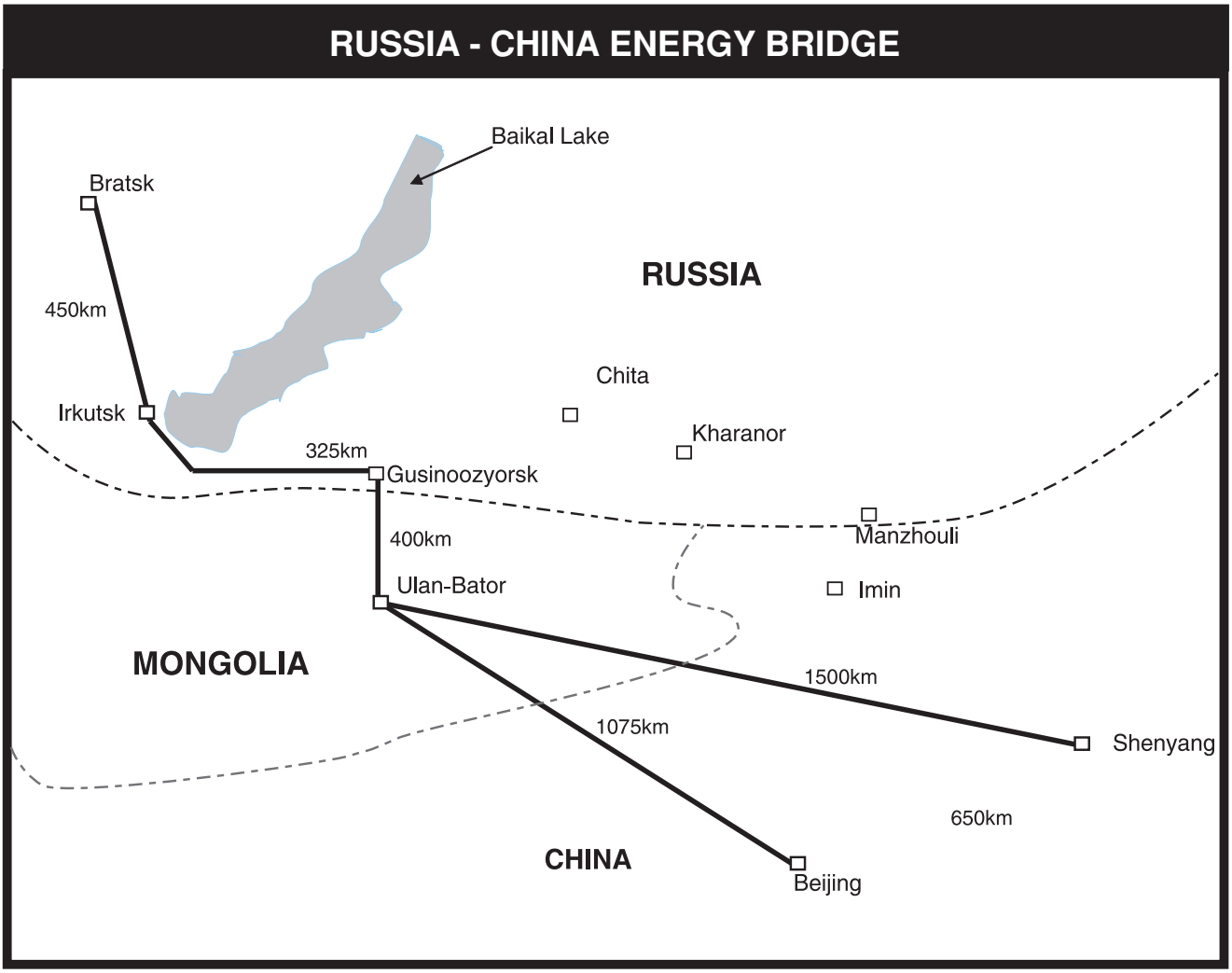
The Russian electric energy industry, fourth largest in the world after the United States, Japan and China, is experiencing an unprecedented transformation. The general outlines of this transformation were confirmed when the Russian government approved plans to break up RAO Unified Energy System of Russia (UES) on December 24, 2004. The plan is supposed to be completed by the end of 2006. The restructuring of the existing energy monopoly includes the creation of competing wholesale and territorial energy companies. Foreign experts, managers and investors have the opportunity to participate in these ambitious plans for the Russian power industry. However, given the eccentricities of Russian reform, and recent uncertainties as to the time and mechanism for privatization, it will be no simple matter for foreigners to participate without a Russian partner.

In late October the Board of Directors of UES approved the creation of two new territorial generating companies (TGC), Numbers 8 and 10. These TGCs, as well as the previously approved TGC-9 and TGC-14, will be created through leasing generating assets to allow for rapid formation. UES has now approved the creation of six new legal entities in the energy market, namely two wholesale generating companies (WGC), numbers 3 and 5, and the four TGCs, Numbers 8, 9, 10 and 14. The UES Board of Directors plans to approve the remaining WGCs and TGCs before the end of January 2005. In early 2005 UES will complete work on creating a legal entity managing the electrical grid.

The creation of the TGCs continues the process of restructuring of electrical power units within UES. It was unclear whether the Russian government would approve the formation of WGCs according to UES's proposal. In late June Prime Minister Mikhail Fradkov placed a six month freeze on founding new wholesale generating companies and on any change in their ownership structure. (See "Black Mark for Chubais," *Russian Petroleum Investor,* September'04.) The government had promised a decision regarding the privatization of the planned WGCs before the end of this year.

Many had expected the government to decide on December 2 to manner in which WGCs would be privatized. Then the decision was postponed to December 16. However, on December 14 Minister of Industry and Energy Viktor Khristenko announced that this matter will be resolved only after the WGCs have been created. That work will take a year to a year and a half to complete.

In Russian government circles, the most often encountered opinion has been that the key question of reform, privatizing WGCs, will once again be left unresolved. Quoting a reliable source, the Russian new agency Interfax reported, "The Ministry of Industry and Energy and some members of



the government do not support privatization of WGCs, and their opinion is very difficult to change." In that insider's judgment, those opposing privatization may "de facto preclude WGCs privatizations." The position of the Ministry of Industry and Energy looks strange. Minister Khristenko earlier was known as an unconditional supporter of privatization of WGCs through special auctions. Meanwhile, the Ministry of Economic Development and Trade, one of the authors of this privatization mechanism, still supported privatization.

UES has reacted undemonstratively to the whirlwind of conjecture around WGCs. Effective development of the electric power industry is possible only by attracting private investors. The first WGCs operating as independent companies will appear only in the third quarter of 2005. By that time the state must decide its position on their ownership and on the division of generating assets, according to insiders at UES.

While details of the government decision on December 24 are not available as of now, the general outline is that power producers formed from the break up of regional utilities will be transferred to UES shareholders by the end of 2006 in a stock exchange. Khristenko announced that the government would continue to hold a dominant stake in the hydropower plants and a 100% interest in nuclear power plants, while all the thermal holdings would be sold.

Qualified Opportunities for Foreign Investment

According to previous plans for reform, a large percentage of the electric industry assets are scheduled to change owners over the next decade. New generating, network and distribution companies will be formed. Large-scale movement of assets will create opportunities for investors, principally strategic investors. However, Integrated Energy Systems (IES) Director General Mikhail Slobodin warns that innovation is no guarantee of financial success for those participating in restructuring. "Moreover," he says, "experience in earlier restructurings has shown that implementation can differ significantly from the original declarations by the government and the business plans of participating companies."

Reforming the Reform

There have now been changes made for the first few years of reform not only in scheduled time frames, but also in specific programs and conditions for restructuring Russia's electric power industry. The government's latest innovation was to create one wholesale hydroelectric generating company as a replacement for the previously planned four units. On October 25 Premier Minister Fradkov, in his role as chairman of the Russian Federation Government, signed Order No. 1367-r for a new WGC, Number 7, which would be comprised of the hydroelectric generating facilities previously assigned to WGCs 7, 8, 9 and 10, pursuant to Prime Minister Kasyanov's Order No. 1254-r of September 1, 2003. Under the new scheme, WGC - 7 would become the biggest structure in the energy market through its control of these hydroelectric generating facilities. The Federal Antitrust Service (FAS) had given its consent for the unified hydro-WGC, but it proposed retaining the possibility of "breaking up" UES.

Fradkov directed the ministries of Industry and Energy and Economic Development, the FAS and the Federal Tariffs Service to analyze WGC-7 operations. They are to do so within six months of the effective date of regulations governing the wholesale electric energy market. If warranted, the governmental bodies are to make appropriate proposals to the Russian Federation government. In early November a meeting of the "structural transformations" subgroup of the task force on reform of the electric power complex of the Council for Competitiveness and Entrepreneurship of the Russian Federation Government, chaired by Andrei Dementyev, director of the Department of Structural and Investment Policy, Ministry of Industry and Energy, decided that in the next year or two it would not be desirable to change the configuration of WGCs.

The board of directors of UES will consider the unified hydro-WGC in the second quarter of 2005. The structure of WGC-4 may be changed. Under a governmental decision made last year, WGC-4 is to be formed from the State Regional Power Plants (SRPP) of Shatura, Smolensk, Yaiva (1), Surgut (2) and Beryozovsk (1). However, there are proposals to include only the last plant in this WGC.

Prime Minister Fradkov and the FAS are preparing another innovation for investors interested in the privatization of distribution networks. FAS opposes the loss of state control over these facilities. "General analysis of the distribution networks suggests that it is premature to privatize them," says Dmitrii Karyakin, head of the Administration for Control and Oversight in the Fuel and Energy Complex at FAS. "We are not opposed to private business participation in distribution networks; private business may participate in them with concessionary rights, may be minority shareholders."

"We are opposed to unscrupulous participants in this business. We need effective mechanisms to preclude dishonest businessmen from entering this sphere," added Karyakin, emphasizing that the FAS considered this problem at Fradkov's request. IES regards private business participation in the distribution assets not only promising, but essential. IES suggests the state review options for reforming these assets. (See Chart 1. "Investment Opportunities and Risks in the Russian Electric Power Industry.")

IES' VIEW ON INVESTMENT OPPORTUNITIES IN RUSSIAN ELECTRIC POWER INDUSTRY

	Item	Opportunities	Dangers
WGCs — hit of 2005-2006 seasons	Beautiful large companies — 27% of electric-power generation in Russia. Potentially high business liquidity. One product — one market model. Acceptable size, for both Russian and Western strategic investors. Acceptable level of manageability — 4–5 plants. Companies of nearly equal strength that are able to compete with each other. Competitive advantage over TGCs in the electric-power market in the near future.	The high declared value of the companies will not be justified in the near future by adequate cash flow. Neither the market nor the Government is prepared to effect a one-time increase in tariffs in connection with the overvaluation of generating capacities — loss according to international financial reporting standards on the 2005 results. The competitive advantages of most companies will diminish from year to year. Fuel is a systemic risk for most investors. The market rules may change. "Dishonest" competition with nonprivatized companies is possible. There are restrictions for investors — the price of the first experience in Russia may be too high for most Western strategic investors.	Obvious and rapid entry into the Russian energy market. A very expensive price of admission. High cost of assets, not justified by current profitability. The purchase of a WGC is a purchase of future possibilities that are limited in lifetime and do not have an obvious likelihood of realization. The winner will be whoever better controls risks — fuel, management, markets, and so forth.

Sourse: IES

Assets Undervalued?

The government has developed concepts of reform for the electric power industry to attract investment and protect shareholder interests. The management of UES actively participated in developing these concepts. However, in the opinion of Slobodin, neither managers nor portfolio investors have yet created the conditions for large-scale investments or growth of capitalization in Russia's electric energy industry.

"Investments in shares of the restructured monopoly and its subsidiaries have not qualitatively altered the value of these assets," Slobodin states. "Notions that were popular two years ago of 'undervaluation' and 'unprecedented bargains' in the Russian electricity industry, do not work today. The current price of assets corresponds to the risks. Cosmetic steps to ensure a company's transparency or to introduce contemporary corporate culture do not guarantee investors the result they desire."

An Ocean of Opportunities. . .

IES forecasts that as a result of activity by strategic investors sometime from 2008 to 2010, the Russian electric-power industry will be a "three-layer pie." The country will have approximately 30 relatively small companies operating regionally as the bottom layer and five or six interregional

IES' VIEW ON INVESTMENT OPPORTUNITIES IN RUSSIAN ELECTRIC POWER INDUSTRY (CONTINUED)

	Item	Opportunities	Dangers
TGCs — orphans with one parent alive	They control 33% of the electric-power market and 35% of the heat market. TGCs are the main interest of most strategic investors in the power industry — LUKOIL, MDM, Gazprom, KES. The TGCs are new market entities on which both portfolio investors who have invested in joint-stock energy companies and strategic investors place high hopes. The TGCs are future local heat monopolists. Proximity to the consumer. The availability of large heat consumers. The presence of infrastructure — it is cheaper to modernize heat-and-power plants than to build a plant from scratch. It is more efficient to construct the development of electrical capacities on a heat load. The power industry is a core business for the TGCs. The ability to use the scale effect — to service the entire generation portfolio: the ability to provide heat service to both large and small consumers.	The "golden" years of the heat-and-power plants that make up the foundation of the TGCs already are behind them. The third phase of loss of business value is beginning. The heat-and-power plants are being challenged by small energy, industrial consumers, and consolidating businesses in housing and municipal services. Restructuring of the sector has significantly narrowed the planning horizon and shifted management's focus.	Modernization of the heat-and-power plants of the TGCs on the basis of current market needs is the most efficient solution for the energy sector and consumers. There is a very high risk of loss of asset value given the considerable opportunities that are hardly being realized in the existing management and ownership model. A definite, quick decision is needed as to the owner of the asset and the future strategy for competing for the consumer. Basic legislation in the field of heat supply needs significant modernization to ensure growth of the value of this business. If the development vector of the TGCs is correct, they will be an obvious competitor to WGC capacities in 3–5 years.

Source: IES

companies as the top layer. By that time, a middle layer will have begun to take shape from the consolidation of enterprises in the bottom layer.

Speaking of prospects for foreign investment in Russia's fuel and energy sector, Stephen O'Sullivan, head of research at UFG, voiced the opinion that internal funds should become the main source of capital investment for oil companies, borrowed funds the main source for Gazprom, and only the energy industry should look to foreign funds. Slobodin shares this position: "In the last six years the Russian economy has grown steadily and at a pace faster than the world average. Internal demand for electric energy is growing accordingly. Potential for increasing exports is being created. Our specialists believe that efficient territorial companies, including companies that combine generation, distribution and marketing, may arise as a result of restructuring Russia's electric energy industry. Financing to form new energy companies may be extremely attractive to the domestic and foreign investor."

IES management foresees other tempting prospects for foreign investors in the next phase of restructuring. The first of these is building companies to supply energy to successful exporters or to regions with growing energy demands. The second challenge is to optimize export flows of electric

IES' VIEW ON INVESTMENT OPPORTUNITIES IN RUSSIAN ELECTRICAL POWER INDUSTRY (CONTINUED)			
	Item	**Opportunities**	**Dangers**
Distribution networks are the ugly duckling	In the value-added chain, distribution networks may account for up to 50–60%. Proximity to the end consumer is becoming an important element. An enormous infrastructure impact on economic development comes from the connection of new consumers and from satisfaction of the growing demand of "old" customers. Most of the networks retain the brand of the joint-stock energy companies and all necessary infrastructures for a market presence. The risks of loss of business and competition are small. Stable cash flows. Growth potential, especially in dynamic regions.	The distribution networks are at the margin of attention of both management and most energy-industry investors. A company that has a different strategy and business specifics — FSK — is working on the management of these assets. In the near future assets will require major investment infusions into this business — an increase in demand at growth points. The "craze for size" in the form of four companies does not promote the growth of capitalization, but heavily burdens management of a company that will have tens of millions of consumers under contract. The consolidation of distribution assets on the national scale will take an enormous amount of time and resources. The undecided question of asset privatization will form too short a horizon for management.	There is significant potential for growth of value if the assets themselves and the management methods are chosen correctly. Options for consolidation and for the management system for these assets need to be reviewed.
Source: KES			

power from Russia. (See Inset 2, "A Competitor to Gas.") IES suggests that relatively low internal prices for energy resources combined with possibilities of significantly higher power-generating efficiency create conditions for effective investments.

Overcoming the chaos and structural imperfection of Russian municipal services, whose annual volume is $20-30 billion, will facilitate successful energy company operations. Increases in municipal rates are already making investments in housing and municipal service consolidations profitable, according to IES studies.

The demand for greater energy efficiency arising from higher domestic fuel prices, potential World Trade Organization (WTO) membership and the Kyoto Protocol ratification creates pressure for modern technologies. The cost in Russia for saving a unit of fuel or cutting CO_2 emissions is several times lower than in countries of the European Union. "Consequently, investments in energy-efficient technologies will yield much greater payback than those in more-developed countries," Slobodin concludes.

IES also considers vertical integration along the "fuel-energy-marketing" line to be attractive. Such moves will give fuel producers more favorable conditions for selling their products. Coal and gas

companies are already seeking opportunities to control fuel-consuming energy companies. However, at the present time it is no easy matter for foreign companies to gain access to production and transportation. (See "With an Eye to the Future," *Russian Petroleum Investor*, November/December 2004.)

For business executives capable of creating growing assets in the electric-power industry and for financial companies, Russia already offers new horizons. Given the shortage of qualified experts, foreign managers can count on extremely attractive employment conditions. In Russia opportunities for consolidating significant financial resources have been extremely limited to date.

. . .And a Sea of Risks

Slobodin also warns of the risks for investors inherent in restructuring Russia's energy industry. Uncertainties in Russian electric industry reform do not only stem from possible changes in restructuring plans. The process is apt to be jostled by a long-term trend toward rising fuel prices worldwide and by conditions demanded from Russia for WTO membership, including sharp increases in Russia's domestic gas tariffs.

Moreover, ratification of the Kyoto Protocol could be a destabilizing factor for investors. The domestic market in quotas for greenhouse gas emissions and new fuel conservation incentives may change the financial outlook for many power industry projects. The interaction of new companies with regional administrations, the federal government and management of the reformed monopoly contain inherent and noteworthy risks as well.

In addition to the perils already noted, contracts for the sale of electricity and the purchase of gas hold intrinsic risk. Long-term contracts for purchase and sale of these commodities are now impossible. This complicates business planning and makes it harder to attract investments.

Strategic Partners

Slobodin shared yet another important observation: "The current 'domestic particularities' mean that only those companies capable of accommodating the entire complex of Russia-specific factors can aspire to high financial-economic outcomes. Companies engaged in strategic investment in Russia's electric power industry will become the vortex for capital, special knowledge and technologies. Long-term investors targeting construction of new energy companies with maximum efficiency and capitalization will become the center and driving force for electric-energy industry reform. It is strategic investment companies that will be able to markedly increase asset value in the electric-power industry."

Slobodin believes that only a handful of companies with long-term investment plans in the electric-power industry are operating today in Russia. These strategic investors include Gazprom (natural gas), the MDM-Group (power-generating coal) and his own company, Integrated Energy Systems (integrated power projects). Mr. Slobodin rules out LUKOIL, YUKOS, TNK-BP, Sual and Rusal as players who see themselves in big energy in the future. (See "Road to Power," *Russian Petroleum Investor*, April 2004.) Decisions by energy concerns like Fortum (Finland) and Enel (Italy) in actively participating in the restructuring facilities in northwest Russia confirm the attractiveness of investment in the Russian electric energy industry.

"Despite the many risks, in just a few years efforts by strategic investors will result in efficient electric power companies with sales of several billion dollars a year," Slobodin predicts. "The 'builders' of these new energy companies are today's strategic investors, those prepared to make long-term investments (financial or organizational) in optimizing new business. It is they who already are doing business in all segments of the power industry – generation, distribution, trading and service."

Priorities for Development

Investors retain hope that the "dead season" in electric-power industry reform will come to an end. "The point of no return in reform of the sector has essentially passed. It would be costlier and more risky to return everything to its former state than to move forward," Slobodin asserts. "The main problem today for the investor in the electric-power industry is a lack of investment opportunity. We urgently need decisive answers to the questions of ownership of the TGCs and of the state's strategy toward this asset. We need to determine how the assets of the distribution networks will be restructured. It is important, but not urgent, to decide whether or not to privatize the WGCs and the distribution networks."

While the government is refraining from decisions which would strip UES of property, the state is working to prepare the legal base. In the near future the Ministry of Industry and Energy will submit draft decrees: "On Operative Control of Electric Energy," "On Licensing Electric Power Sales to Citizens," and "On Procedures for Granting Intersystem Connections." The Ministry of Industry and Energy has already conveyed to ministries and departments for comment and approval regulations for the retail electric power market. It has done the same with a decree on procedures for forming reserves and guaranteeing investments.

The next potential investment will come via an auction to choose strategic partners for construction of new generating facilities of up to 1500 MW, which UES plans to begin construction in 2005. UES believes that a decree for this project will be adopted before the end of 2004. The generating facilities should be commissioned in 2007-2008 to address the forecasted 2008 reserve capacity shortages. Sergei Dubinin, member of the UES management board, notes that shortages of generating capacity are most likely in Russia's northwest and center and in the Urals. New generating facilities will be built under a 10 year investment guarantee. Tenders under this program are for the construction of plants with capacity of 4500–5000 MW. The organizer of the tender is expected to be the System Operator, Central Dispatch Unit, UES. ❑

A Competitor to Gas

In the fall of this year, during President Putin's visit to the People's Republic of China, IES proposed reconsidering a languishing project to build a Russian-Chinese Energy Bridge. The facility would supply energy-short regions of China with adequate levels of electric power at competitive prices. The project is oriented toward those regions of China where 25% of Kovykta gas was to have been exported for use in producing electricity. Gas exports from the Chayandninskoye Field (Yakutiya) and Sakhalin are targeted at the same markets.

The characteristics of the project proposed by IES are:

- Power to be transmitted – 3000 MW;
- Guaranteed electric-power deliveries – minimum of 15 billion kWh per year;
- Voltage – ±600 kV;
- Proposed costs – approximately $2 billion;
- Construction time – 3-4 years.

IES proposes to attract large private Russian energy companies created during the energy sector reform as participants in this project. These companies have, IES claims, the investment, intellectual and managerial potential to realize this project.

If the People's Republic of China is interested in the project and if the project receives strategic support from the Russian Federation government and RAO UES of Russia, IES is prepared to act as project co-organizer and to become a co-investor, participating in the formation of the international transmission company envisioned under the project.

According to IES, the company brings considerable capability to the project. It controls the four largest network-building enterprises in Siberia. These enterprises specialize in construction of transformer substations and high-voltage power transmission lines (220, 500 and 1150 kV), both suitable to the Russian-Chinese Energy Bridge. Finally, IES has the necessary basic information on this project and a staff of experienced specialists and managers who directly participated in developing the project development from 1995–2000.

Russian and Chinese leaders adopted an action plan for the period 2005–2008, in which they pledged to encourage electric power transmission from Russia to China based on equality and the mutual benefit of cooperation. The leaders further promised to encourage and support participation of Russian companies in competitions to modernize China's existing power facilities and to supply equipment for its newly-built power plants.

IES at a Glance

The closed joint-stock company Integrated Power Systems (IES) was founded in December 2002, by Viktor Vekselberg, owner of Access/Renova, co-owner of the aluminum business SUAL-Holding and a major shareholder in TNK-BP (via Access/Renova). IES holds equity interests in regional companies engaged in electricity, heat supply and gas distribution.

IES holds a block of shares in RAO UES of Russia (UES) and strategic parcels of shares in the regional power utilities Sverdlovenergo, Permenergo, Komienergo, Rostovenergo and Nizhnovenergo. The combined capacity of the five regional utility companies in which IES holds strategic shares is 6.5 megawatts. The total electricity supplied by these five utilities is nearly 78 billion kilowatt-hours. They serve more than 6 million consumers, or 12.1% of Russia's energy market.

Sverdlovenergo is one of the country's largest power utilities. It ranks third in volume of net energy supplied to consumers in Russia. Sverdlovenergo is composed of nine electric power stations with a capacity of 1,773 megawatts. The utility leases three of the biggest electric power stations, the GRESes Reftinskaya, Verkhnetagilskaya , and Sredneuralskaya, from UES. Sverdlovenergo incorporates three state enterprises running power supply systems: the Nizhnetagilskiye and Sverdlovskiye municipal power networks and the Zapadniye power network. The length of Sverdlovenergo's power transmission lines is 38,000 kilometers. The company has three repair enterprises, Sverdlovenergoremont, Sverdlovelektroremont and Sverdlovenergospetsremont.

Sverdlovenergo provides centralized electricity to a territory of 195,000 square kilometers, with a population of 4.7 million. It supplies centralized heat to the region's ten largest cities. Among Sverdlovenergo's clients are Russia's major metallurgical and machine-building enterprises. They include: Sual Holding (North-Ural bauxite mine, Uralsky Aluminum Plant, Bogoslovsky Aluminum Plant, Kamensk-Ural Metallurgical Plant), enterprises of the Uralskaya Mining and Smelting Company (Uralelektromed, KGOK, Vanadium, Sredneuralsky Copper Melting Plant, Bogoslovskoye Ore Board,), Nizhnetagilsky Integrated Iron and Steelworks, Serovsky Ferroalloy Plant, Uralsky Integrated Electrochemical Plant, Verkhnesaldinskoye Metallurgical Production Association. Sixty percent of the fuel consumed to produce power is coal while 40% is gas. In 2003 Sverdlovenergo delivered 33.6 million kilowatt-hours of electricity and 18.5 million giga-calories of thermal power.

Permenergo provides centralized heat and electricity to consumers of the Perm region and Komi-Perm Autonomous District. Permenergo incorporates eleven thermal and one hydroelectric power plants, nine electricity and heat supplying enterprises, eight system-wide repair and service enterprises. The capacity of Permenergo's power plants totals 1,933.4 megawatts of electricity and 7,022 giga-calories/hour of thermal power. Gas is the predominant fuel consumed, 92%; coal and fuel oil are used for production of 5% and 3%, respectively. During 2003 Permenergo delivered net electric energy of 16,466 million kilowatt-hours and 15.1 million giga-calories of thermal power. The length of Permenergo's power transmission lines is 51,178 kilometers. Thermal power supply lines are 408.2 kilometers in length. Power transmission lines linking Permenergo with the Uralenergo Unified Energy System and Sverdlovenergo, Udmurtenergo and Bashkirenergo utilities run on the territory of the Perm region.

Permenergo's key consumers are industrial, transportation, housing services, utilities sector enterprises and organizations. The largest are Uralkaly, Avisma, Solikamskbumprom, Silvinit, Soda, Permskiye Motory, Motovilikhinskiye Zavody, LUKOIL-Permnefteorgsintez and LUKOIL-Permneft.

Komienergo provides centralized electricity and heat to consumers of the Komi Republic. The company consists of thirteen affiliates: four electricity and heat-co-generating plants (TETS), two affiliated thermal and five electric power supply lines, one specialized repair plant (Severenergoremont) and the affili-

ate Energosbyt. Apart from Komienergo's electric power stations, the Komi Republic's energy system includes the Pechorskaya GRES, owned by UES and TETS of the Syktyvkar Integrated Timber Fabrication Plant.

The Komi Republic's energy system is isolated. Energy transfers with neighboring regions account for only about 4% of all supplies to the network. Komenergo's capacity totals 740 megawatts of electricity and 2,735.9 giga-calories/hour of thermal power. Gas is consumed to produce 53% of the energy; coal and fuel oil comprise 40% and 7% of production, respectively. In 2003 net electricity supply was 4,658 million kilowatt-hours, while net heat supply was 6.7 million giga-calories. The total length of the company's power supply system is 23,000 kilometers.

Industrial consumers account for 52.2% of the Republic's energy use. Oil production, coal, gas and woodworking are key industries. Komenergo's largest consumers are Vorkutaugol, Intinskaya Coal Co. and Gazprom

Rostovenergo is part of the Unified Energy System of the Northern Caucasus. Rostovenergo supplies energy to the Rostov region,which covers 100.8 square kilometers and has a population of 4.4 million. The Rostovenergo system holds the central position in the south of Russia. It generates energy through five electric power plants, Volgodonskaya TETS-2, Rostovskaya TETS-2, Tsimlyanskaya GES, Kamenskaya TETS and Volgodonskaya TETS-1.

Rostovenergo's electricity generating capacity totals 829.3 megawatts; its heat generating capacity is 3.99 giga-calories/hour. Gas accounts for 91% of the fuel used for energy production, while coal is used to produce 7%. In 2003 net electricity supply was 10,658 million kilowatt-hours, while net thermal power supply was 3.8 million giga-calories. The total length of Rostovenergo's power supply systems is 78,000 kilometers.

Rostovenergo is an energy-deficient system. The power shortage, 70%, is overcome through compensating deliveries by Russia's Federal Wholesale Power Market (FOREM). Key consumers are industrial plants, producers of agricultural products, transportation and communications enterprises, building organizations and residents of Rostov-on-Don and the Rostov region. Major consumers are the North Caucasian railroad, Tagmet, OAO NEZ, Rostselmash, Novocherkassky Synthetic Products Plant, OAO Belokalitvenskoye Metallurgical Production Association, Sulinsky Integrated Iron and Steelworks and Donskoy Tabak.

Nizhnovenergo is a new acquisition of IES. The capacity of Nizhnovenergo's power plants totals 1,271 megawatts of electricity. In 2003 net electric energy supply was13,372 million kilowatt-hours, while net thermal power supply was10.4 million giga-calories. The length of Nizhnovenergo's power transmission lines is 64,000 kilometers.

IES Restructures into IES-Holding

In 2004, IES restructured as IES-Holding, which combined and reorganized its business lines as follows:

- Generation (Sverdlovenergo, Permenergo, Komienergo, Rostovenergo and Nizhnovenergo)
- Multi-Energy
- Energy Solutions
- EnergoStroiEngineering
- Energotrading

IES-Multi-Energy was been founded in June, 2004. The company provides electricity, gas and heating supply services to the housing and municipal sectors. In the first half of 2004 the enterprises of IES-Multi-Energy sold more than 1.9 billion kWh of electric power and 8.7 billion cubic meters of gas in the Sverdlovsk and Perm regions. The annual revenue of the companies subsumed into the IES-Multi-

Energy group is more than $120 million. During the last 18 months, total investment in infrastructure was nearly $20 million.

IES-Energy Solutions offers consulting services to resolve energy supply problems for medium and large industrial enterprises. Client of the company are businesses that consume electricity above 25 MW and/or thermal use of more than 50 giga-calories/hours in Sverdlovsk, Irkutsk, Leningrad region and the republics of Karelia and Komi.

IES-EnergoStroiEngineering includes four enterprises specializing in construction of high-voltage electric transmission lines and transformer substations. They are: Vostoksibelektrocetstroi (Irkutsk), Sibelektrosetstroi (Novosibirsk), Zapsibelektrosetstroi (Surgut) and Noyabrskelektrosetstroi (Noyabrsk). These building companies serve the Federal Grid company of UES, Intersystem Electric Transmission Lines of Russia and the oil and gas sector business. In 2003 IES-EnergoStroiEngineering's revenue from design and construction activities was $860 million. In the first half of 2004, revenue was 1.2 billion rubles. In 2003 IES-EnergoStroiEngineering built and put into operation more than 850 km of high-voltage lines and transformer substations with capacity of more than 300 thousand kW. In the first half of 2004 those figures were 472 km and 157.8 thousand kW, respectively.

IES-Energotrading delivers power resources to corporate clients and guarantees those deliveries. The company works in Perm, Sverdlovsk and the Republic of Komi. IES-Energotrading's clients are average to large metallurgical and chemical companies. During 2004 IES-Energotrading will supply an estimated 1.49 billion kWh of electric power, 120 million cubic meters of gas and 463,000 tons of coal. The company estimates that its 2004 revenues for electric power deliveries and power resources will be $640 million.